ACC NR: AP6030143 (A) SOURCE CODE: UR/0120/66/000/004/0132/0137

AUTHORS: Averina, A. P.; Vinogradov, V. I.; Grinchenko, T. G.

ORG: none

TITLE: Electric mass filter as a gas analyzer in vacuum systems

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1966, 132-137

TOPIC TAGS: vacuum gas analyzer, laboratory instrument, mass spectrum, mass filter, gas filter/ EFM-1 mass filter

ABSTRACT: The construction and operation details of an electric mass filter EFM-1 are described. The filter is used to control gas composition in vacuum systems over a pressure range of 10^{-3} to 10^{-8} torr. The block-schematic of the system is shown. It consists of a power supply system, a counter, an input cascade to the electrometric amplifier to measure ion currents, an electrometric amplifier, a potentiometer, and a high frequency generator. The generator has a variable voltage output at 3 Mc. It is stabilized by means of a ferro-resonance stabilizer to reduce variations in the voltage to less than 1% for an input voltage variation of ±10%. The detailed circuit diagram of the generator is given. It consists of a master oscillator, an amplifier, a power supply, a linear detector, and a measuring system. The complete filter system is tested with a zone refining and molybdenum smelting equipment. Spectrometric data

UDC: 621.384.8

Card 1/2

ACC NR: AP6030143

are obtained for the constituent gases, and it is shown that the resolving power for the equipment is 50 and that the atomic mass range is 1--50. The authors thank S. I. Gendelya for taking part in the construction and preparation of the counter, and express their gratitude to I. A. Baranov and V. F.Gruzdev for their influence on the work and their help for organizing the test equipment. Orig. art. has: 9 figures.

SUB CODE: 14, 09/ SUBM DATE: 17Feb65/ ORIG REF: 002/ OTH REF: 007

Card 2/2

VINOGRADOV, V. I., and KRIVOSHEYEV, M. I., Engineer.

"Radio Broadcasting" a chapter in the book Radio and Electronics and Their Technical Applications, by A. I. Berg, et al. Moscow 1956.

Summary of chapter 1071291

VINOGRADOV, V.I.

Isotope composition of sulfur in the rocks and minerals of the Nikitovka deposit in the Donets Basin. Trudy IGEM no.99:154-164 '63. (MIRA 16:9)

(Donets Basin--Sulfur isotopes)

VINOGRADOV, V.I.; FEDOSEYEVA, K.I.

Using the universal decimal classification. NTI no.1:18-23 '63. (MIRA 16:8)

VINOGRADOV, Vasiliy Ivanovich; KAMINSKIY, Ya.A.; OZEROVA, G.A.; SIDENKO, S.G., red.

[Organization and techniques of Soviet cooperative trade] Organizatsiia i tekhnika sovetskoi kooperativnoi torgovli. Moskva, Izd-vo TSentrosoiuza, 1961. 606 p. (MIRA 16:4)
(Cooperative societies)

SAUKOV, A.A.; AYDIN'YAN, N.Kh.; VINOGRADOV, V.I.

Migration of mercury in the supergene zone. Trudy IGEM no.70: 20-29 '62. (MIRA 15:9)

(Mercury) (Geochemistry)

VINOGRADOV, V.I., kand. sel'khoz. nauk, otv. red.; NEMCHINOV, V.S., akademik, red.; ZUBKOV, A.I., kand. ekon. nauk, red.; LETUNOV, P.A., doktor sel'khoz. nauk, red.; KAVUN, P.K., red. izd-va; KASHINA, P.S., tekhn. red.; ASTAF'YEVA, G.A., tekhn. red.

[Natural regionalization of the central part of Krasnoyarsk Territory and some problems of farming near cities]Prirodnoe raionirovanie tsentral'noi chasti Krasnoiarskogo kraia i nekotorye voprosy prigorodnogo khoziaistva. Moskva, Izd-vo Akad. nauk SSSR, 1962. 214 p. (MIRA 15:11)

1. Krasnoyarskaya kompleksnaia ekspeditsiya.
(Krasnoyarsk Territory--Physical geography)
(Krasnoyarsk Territory--Agriculture)

VINOGRADOV, Valentin Ivanovich, dots.; SERGEYEV, M.P., prof., red.; YAMPOL'SKAYA, I.G., red.; KOLBICHEV, V.I., tekhn. red.

[Operating diesel tractors in winter] Ekspluatatsiia dizel'nykh traktorov v zimnikh usloviiakh. Pod red. M.P.Sergeeva. Cheliabinsk, Cheliabinskoe knizhnoe izd-vo, 1960. 33 p. (MIRA 14:10)
(Diesel engines—Cold weather operation) (Tractors)

VINOGRADOV, A.P.; KORZHINSKIY, D.S.; SMIRNOV, V.I.; SHCHERBAKOV, D.I.; AYDIN'YAN, N.Kh.; VINOGRADOV, V.I.; VOL'FSON, F.I.; GENKIN, A.D.; DANCHEV, V.I., LUKIN, L.I.; OZEROVA, N.A.; PEREL'MAN, A.I.; REZHARSKIY, V.I.; SMORCHKOV, I.Ye.; FEODOT'YEV, K.M.; SHADLUN, T.N.; SHIPULIN, F.K.

Aleksandr Aleksandrovich Saukov, 1902-1964; obituary. Geol. rud. mestorozh. 7 no.1:124-125 Ja-F '65. (MIRA 18:4)

VINOGRADOV, V. I.

86-58-3-29/37

AUTHOR: Vinogradov, V.I.

TITLE: Technical Training at Refresher Courses (Tekhnicheskaya ucheba na sborakh)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 3, p 75 (USSR)

ABSTRACT: The author describes briefly the technical training program for pilots taking refresher courses. The author suggests that such courses should be held at the beginning of each winter and summer training period.

AVAILABLE: Library of Congress

Card 1/1

VINOGRADOV, V. I.

Technical operation of oceangoing motor ships Moskva, Izd-vo Ministerstva morskogo i rechnogo flota, 1953. 76 p. (54-44134*

VM763.V5

1. Marine engines

VINOGRADOV, V I

Organizatsiya I tekhnika sovetskoy torgovi. Organization and technique in Soviet trade. by V. I. Vinogradov i Ya. A. Kaninskiy.
Moskva, Gostorgizdat, 1950.
415 p. Illus., Diagrs.

Book is a course for technical institutions covering Soviet trade. It deals with problems pertinent to organizational structure of all Soviet trade branches, dealing with questions of establishment, technical equipment of trade enterprises, etc.

OGANEZOV, M.G.; VINOGRADOV, V.I., red.

[Layout and equipment of commercial enterprises; an album of visual aids] Ustroistvo i oborudovanie torgovykh predpriiatii; al'bom nagliadnykh posobii. Moskva, Izd-vo TSentrosoiuza, 1963. 119 p. (MIRA 18:2)

VINOGRADOV, V.I., inzh.

Improvement of diesel-generator installations on ships.
Sudostroenie 30 no.11:39 N '64. (MIRA 18:3)

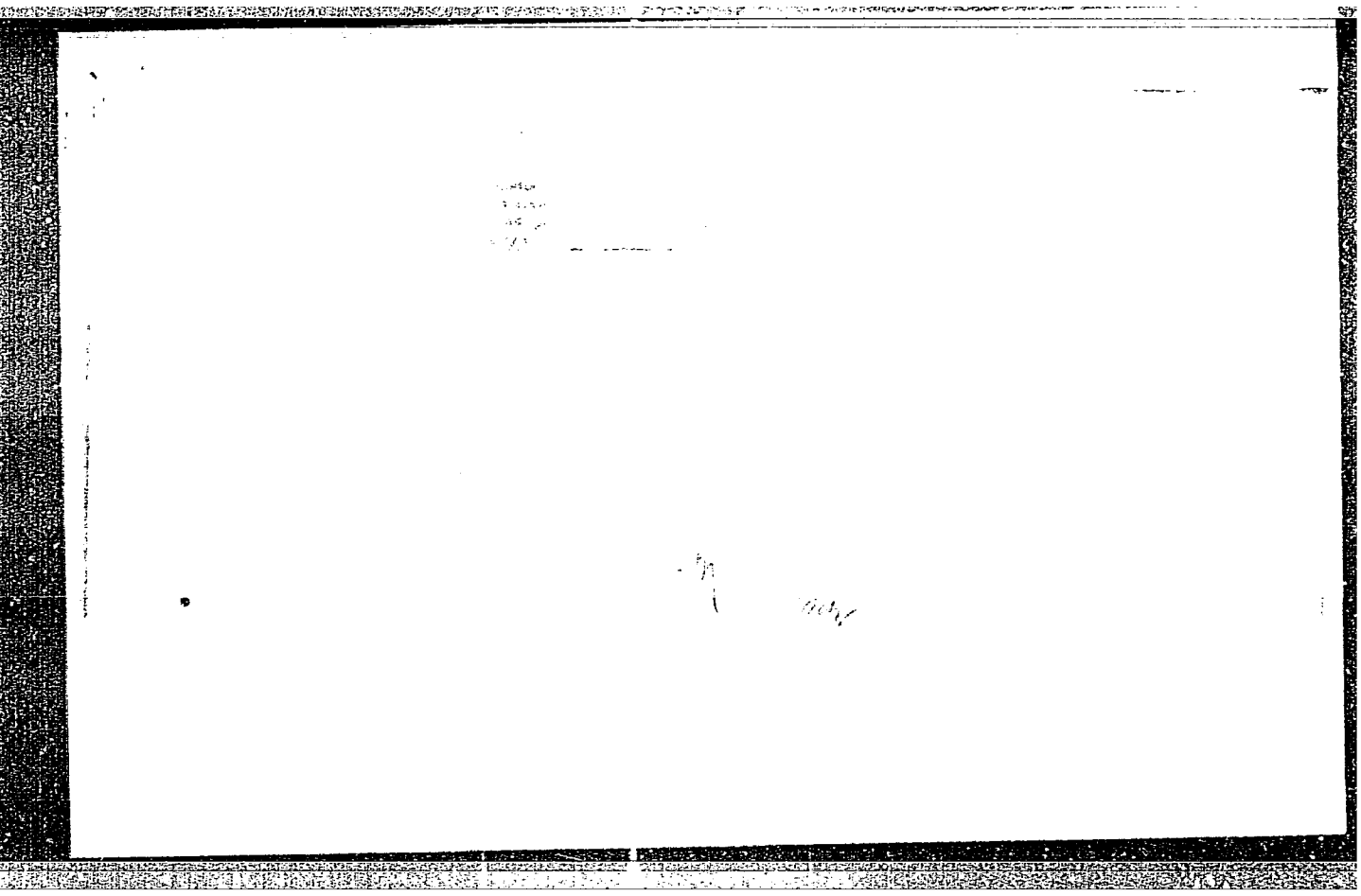
VYSOTSKIY, A. A.; VINOGRADOV, V. I.; ZOBACHEV, Yu. Ye.; PUCHKIN, A. V.

Preventing the corrosion of cooling jackets on marine internal combustion engines. Inform.sbor.TSNIIMF no. 87 Tekh.ekspl. mor.flota no. 20:57-82 '62. (MIRA 17:5)

SERGEYEV, M.P.; VINOGRADOV, V.I., kandidat tekhnicheskikh nauk.

Review of V.S. Likhachev's book "Testing tractors." M.P. Sergeev, V.I. Vinogradov. Avt.i trakt.prom. no.4:47-48 Ap '56. (MLRA 9:8)

1. Chelyabinskiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.
(Tractors--Testing) (Likhachev, V.S.)



KOPYTOV, Pavel Aleksandrovich; VINOGRADOV, V.I., red.; PAVLOVA, A.S., red.izd-va; FOMICHEV, F.M., tekhn.red.

[Commercial and business correspondence] Korrespondentsiia i deloproizvodstvo. Moskva, Izd-vo TSentrosoiuza, 1959. 151 p. (MIRA 13:4)

(Commercial correspondence)

L 12848-63 EWP(k)/EWP(q)/EWT(m)/BDS AFFTC/ASD Pf-4 JD/HW 67
ACCESSION NR: AP3001469 S/0133/63/000/005/0432/0432 66

AUTHOR: Smirnov, L. A.; Timonina, V. M.; Kompaniyets, G. M.; Korneyev, N. D.; Vinogradov, V. I.

TITLE: In the Ural Scientific Research Institute of Ferrous Metallurgy

SOURCE: Stal', no. 5, 1963, 432

TOPIC TAGS: steel top casting, chemical sealing, aluminum powder, rimmed steel

ABSTRACT: Aluminum powder was used as an aftercharge for the chemical sealing of 7-ton square ingots. It was added under the metal flow in the top casting process, 5-6 seconds before closing of the stopper. Steels 0.8, 10, 15, St. 2 and St. 3Khz were used in the experiment to determine the consumption of aluminum powder. The amount of powder varied from 80 to 300 grams per ton depending on the carbon content; the best sealing was achieved in ingots with over 0.12% carbon. The rolling of chemically sealed steel gave better results than rolling rimmed steel of the same profile. A lower percentage of bloom trimmings, a higher production of first-grade steel, and a lower amount of rejected products were observed in the former type. Moreover, the chemical sealing improved working conditions in the pouring bay. Orig. art. has: 3 tables.

Card 1/2

L 12848-63
ACCESSION NR: AP3001469

ASSOCIATION: Ural'sky nauchno-issledovatel'skiy institut chernykh metallov; Nizhne-Tagil'sky metallurgicheskiy kombinat (Ural Scientific Research Institute of Ferrous Metals in Collaboration with Nizhne-Tagilsk Metallurgical Combine)

SUBMITTED: 00	DATE ACQ: 10Jun63	ENCL: 00
SUB CODE: 00	NO REF SOV: 000	OTHER: 000

Card 2/2

VINOGRADOV, V.I., kand.sel'skokhoz.nauk, otv.red.; SHUL'ZHENKO, I.F., kand.sel'skokhoz.nauk, otv.red.; PEL'T, N.N., red.izd-va; GUS'KOVA, O.M., tekhn.red.

[Problems in the development of agriculture and stockbreeding in the Altia; transactions of a special comprehensive expedition through areas recently brought under cultivation] Voprosy razvitiia zemledeliia i zhivotnovodstva na Altae; trudy Osoboi kompleksnoi ekspeditsii po zemliam novogo sel'skokhoziaistvennogo osvoeniia. Moskva. Vol.2. 1960. 150 p. (MIRA 13:3)

1.Akademiya nauk SSSR. Sovet po izucheniyu proizvoditel'nykh sil. 2. Sovet to izucheniyu proizvoditel'nykh sil Akademii nauk SSSR (for Vinogradov).
(Altai Territory--Agriculture)

VINOGRADOV, V. I.

AID P - 2798

Subject : USSR/Engineering

Card 1/1 Pub. 28 - 7/13

Author : Vinogradov, V. I.

Title : Automatic regulator of lubricant in internal combustion engine cylinders

Periodical : Energ. byul. 8, 19-22, Ag 1955

Abstract : The author describes the design and operation of an automatic regulator feeding lubricating oil in pistons and cylinders of internal combustion engines. The observations were made on a D 42/50 two-cycle engine with a Bosch-type lubricator. The results and data obtained were registered in four graphs and one table. A schematic drawing of the regulator is included.

Institution : None

Submitted : No date

VINOGRADOV, V. I.

VINOGRADOV, V.I.; AKIMOV, P.P., redaktor.

[Technical operation of ocean-going motor ships] Opyt tekhnicheskoi ekspluatatsii teplokhodov morskogo flota. Moskva, Izd-vo Ministerstva morskogo i rechnogo flota, 1953. 67 p. (MLRA 7:7)
(Marine engines)

VINOGRADOV, V. I.

Opyt tekhnicheskoi ekspluatatsii teplokhodov morskogo flota [Experience in the technical operation of diesel ships of the maritime fleet]. Moskva, Vodtransizdat, 1953. 67 p.

SO: Monthly List of Russian Accessions, Vol. 7 No. 2 May 1954.

VINOGRADOV, V I

Opyt Teknicheskoy Ekspluatatsii Teplokhodov Morskogo Flota [Experience in Technical Utilization of Navy Motor Ships] Moskva, Izd-vo Ministerstva Morskogo i Rechnogo Flota, 1953.

67 p. Illus., Diagrs., Tables.

"Literatura": p. [68]

At Head of Title: Moscow. Tsentral'nyy Nauchno-Issledovatel'skiy Institut Morskogo Flota.

VINOGRADOV, V.I.

Organizatsiia i tekhnika sovetskoi
torgovli (Organization and techniques of Soviet trade).
Moskva, Gostorgizdat, 1954. 560 p.

SO: Monthly List of Russian Accessions, Vol. 7, No. 5, August 1954

VINOGRADOV, V. I.

Organizatsiya i tekhnika sovetskoy torgovli (Organization and technique of Soviet Trade by) V. I. Vinogradov i Ya. A. Kaminskiy. Moskva, Gostorgizdat, 1954.

559 p. Illus., Diagrs., tables.

N/S
752.3
.V7
1954

VINOGRADOV, V.I.

On dissolution of secondary molybdic minerals in weak H_2SO_4 and Na_2CO_3 solutions [with summary in English]. Geokhimiia no.3:233-239 '57. (MLRA 10:7)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR, Moskva.
(Mineralogy) (Molybdenum)

VINOGRADOV, V. I., Cand Geol-Mineral Sci -- (diss) "Water areas of molybdenum distribution (Central Asia and the Caucasus deposits) for example and some questions relative to the hydrochemistry of molybdenum." Mos, 1958. 15 pp. (Acad Sci Inst Geology of Ore Deposits, Petrography, Mineralogy, and Geochemistry), 125 copies. (KL, 9-58, 114)

VINOGRADOV, V.I.

Use by the merchant marine of the 5DKRN 50/110 engine.
Inform. sbor. TSNIIMF no.53:27-47 '60. (MIRA 14:12)
(Marine diesel engines)

VINOGRADOV, V.I.; BORISOVA, V.N.; SZUY YUN-CHAN [Hsü Yung-ch'ang]

Origin of volcanic sulfates. Dokl. AN SSSR 158 no.3:636-637 S '64.
(MIRA 17:10)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii AN SSSR. Predstavlenc akademikom D.S.Korzhinskim.

L 06401-67 EWT(d)/EWT(l) IJP(c) DJ/WG

ACC NR: AT6024279 SOURCE CODE: UR/2976/66/000/005/0038/0050

47
B+1

AUTHOR: Petrov, A. V.; Vinogradov, V. I.

ORG: none

16C

TITLE: Permanent memory based on metal cards

SOURCE: Moscow. Vyssheye tekhnicheskoye uchilishche. Vychislitel'naya tekhnika, no. 5, 1966, 38-50

TOPIC TAGS: electromagnetic memory, data storage, computer storage device, magnetic circuit, punched card

ABSTRACT: Principles, construction, and performance of a permanent electromagnetic computer storage system based on perforated metal cards are discussed. Figure 1 shows two wire loops coupled by a common magnetic field. The voltage induced in L_2 due to the current flowing in L_1 is given as

$$e_2 = M_{21}\frac{di_1}{dt}\,0.$$

where M_{21} is the mutual inductance determined by the geometry of the circuit and magnetic permeability of the medium. Hence for a given current pulse in the primary, the voltage output of the secondary depends on the mutual inductance or, for a fixed geometry, on the magnetic permeability of the medium between the two loops. A permanent memory system utilizes this physical relation. The loops are mounted on two

Card 1/3

L 06401-67

ACC NR: AT6024279

separate opposing plates; each plate has an equal number of loops arranged to form an XY matrix. To define the induction areas for each loop-pair and to reduce the cross-talk a magnetic screen with apertures slightly larger than the diameter of the loops is located between the two plates. The apertures and the loops are very carefully positioned with respect to each other to achieve a maximum improvement in signal-to-noise ratio. The perforated, information carrying cards are made of copper, brass or duraluminum. The cards are patterned after their paper equivalents and have 45 columns with 3.2 x 6.35 mm perforations. One practical method of fabricating the two loop-planes is shown in Fig. 2. The planes are made using printed circuits, such that each horizontal row of rectangular loops represents a 45-bit word and each vertical long rectangular loop senses the state of the particular bit in each word. A memory with a capacity of 3072 45-bit binary words was constructed from 256 separate cards. A diode decoding logic was used for card, row, and column selections. A description of the circuitry is included. Either sinusoidal or pulse signals can be utilized for excitation of the input loops. A blocking oscillator generates rectangular current pulses, allowing for an operation at a repetition rate of up to 5 MHz. The sinusoidal oscillator is designed for 1 MHz operation. An amplifier accepts the 5 Mv input pulses from the memory and provides 5 v output. Orig. art. has: 15 figures.

Card 2/3

L 06401-67

ACC NR: AT6024279

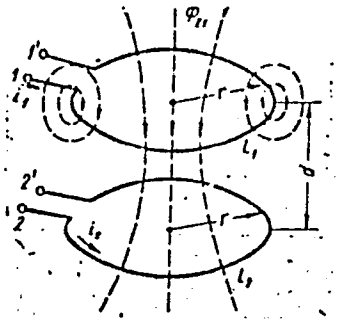


Fig. 1.

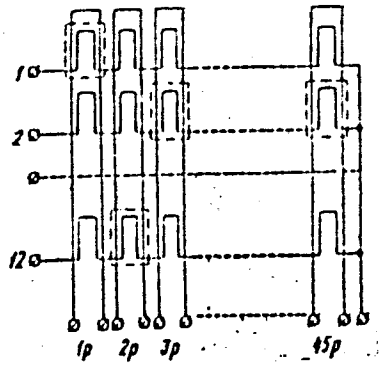


Fig. 2.

SUB CODE: 09/ SUBM DATE: 00/ ORIG REF: 003/ OTH REF: 002

Card 3/3

BURMISTROV, Vasiliy Georgiyevich; VINOGRADOV, Vasiliy Ivanovich; KAZYMOV, Vladimir Nikolayevich; KOSTIN, Vasiliy Yelizarovich; MARKOV, Arkadiy Semenovich; ZYDERMAN, Pinkhus Moiseyevich; ZHERENKOV, Ye.V., red.

[Collection of problems on the organization and technique of trade] Sbornik zadach po organizatsii i tekhnike torgovli. Moskva, Ekonomika, 1965. 174 p. (MIRA 18:6)

ACC NR: AR7002217 SOURCE CODE: UR/0271/66/000/010/B005/B005

AUTHOR: Vinogradov, V. I.

TITLE: High-speed system of discrete information transmission between digital computers whose redundancy is functionally determined by malfunction probability

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika, Abs. 10B24

REF SOURCE: Sb. 2 ya Vses. konferentsiya po teorii kodir. i yeye prilozh. Sekts. 4. Ch. I. M., b. g., 19-27

TOPIC TAGS: data transmission, digital computer, high speed data transmission

ABSTRACT: The problem of rapid and reliable transmission of data between digital computers operating within a single computing system is investigated. The concept of the discrete transmission ensemble representing the whole complex of transmission system characteristics, transmission methods and coding methods is introduced. A generalized equation of the transmission ensemble is derived. The investigation is limited to a group of codes which can be expressed by a matrix

Card 1/2 UDC: 681.142.019.3.001

ACC NR: AR7002217

whose elements are combinations of word symbols. The communication system between a special-purpose computer and Minsk-1 digital computer is given as an example. It is stated that the method described is promising in the case of computers designed for the processing of "pictorial" information, which essentially use a matrix presentation of information. There is one illustration and a bibliography of 3 titles. [Translation of abstract] [DW]

SUB CODE: 09/

Card 2/2

VINOGRADOV, V.K.; KONKIN. P.I., podpolkovnik, redaktor; MYASNIKOVA, T.F. tekhnicheskiy redaktor.

[Saving gasoline in the operation of automobiles] Ekonomiia benzina pri ekspluatatsii avtomobilia. Moskva, Voen. izd-vo Ministerstva oborony Soiuza SSR, 1955. 74 p. (MLRA 8:8)
(Automobiles--Fuel consumption)

Vinogradov, V.A.

AID P - 2101

Subject : USSR/Chemistry

Card 1/1 Pub. 78 - 14/24

Authors : Vinogradov, V. K. and Serov, A. V.

Title : Appeal to standardize motor-testing methods for auto and tractor lubricants

Periodical: Neft. khoz., v.33, no.4, 61-66, Ap 1955

Abstract : The author compares existing methods of testing motor lubricants as worked out by TsIATIM (Central Scientific Research Institute of Aviation Fuels and Oils), VNIITneft'yu (All-Union Scientific Research Institute for the Transport, Storage and Use of Oil Products), VNIIAT (All-Union Scientific Research Institute of Automobile Transport) and suggests the adoption of a unified standardized method of testing.

Institution: None

Submitted : No date

VINOGRALOV, V. K.

Initiators of socialist competition in the light industry Stalin prize winners Moskva, Znanie, 1953. 23 p.

VINOGRADOV, V.I.

Automatic regulator of the feed of lubricating oil into the cylinders of engines. Energ.biul.no.8:19-22 A '55.
(Gas and oil engines--Lubrication) (MLRA 8:10)

VINOGRADOV, V. K. ; ISAYNSKIY, B. V.

Industrial Accidents.

Protection of labor and safety engineering in light industry. Tekst. prom 12, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.

VINOGRADOV, V. K. (Gor'kiy)

Problems of labor hygiene in the production of synthetic camphor from resinous turpentine. Gig. truda i prof. zab. 5 no.7:44-45 Jl '61. (MIRA 15:7)

1. Gor'kovskiy nauchno-issledovatel'skiy institut gigiyeny truda i professional'nykh zabolevaniy.

(TURPENTINE INDUSTRY--HYGIENIC ASPECTS)
(CAMPHOR--TOXICOLOGY)

AFANAS'YEV, Aleksandr Afanas'yevich; RABINOVICH, Yakov Mikhaylovich; VINOGRADOV, V.K., retsenzent; LIOKUMOVICH, Kh.Kh., kand. tekhn. nauk, retsenzent; HOVOKHATSKIY, K.I., nauchnyy red.[deceased]; MINAYEVA, T.M., red.; TRISHINA, L.A., tekhn. red.

[Safety engineering in shoe manufacture]Tekhnika bezopasnosti v obuvnom proizvodstve. Moskva, Rostekhizdat, 1962. 225 p. (MIRA 16:2)

(Shoe industry--Safety measures)

VINOGRADOV, V. K.

AID P - 341

Subject : USSR/Chemistry

Card : 1/1

Authors : Senichkin, M. A. and Vinogradov, V. K.

Title : Evaluation of filtration of additives from motor oils

Periodical : Neft. Khoz., v. 32, #5, 67-70, My 1954

Abstract : The concentration of the additives in motor oils was studied by the authors by means of periodical filtration. The concentration is found to vary with the filtrating material and the type of additives. The operating characteristics of the motor oil and the effect of the filtrating material and type of additives must be determined experimentally. 2 charts, a diagram and a table.

Institution : None

Submitted : No date

USSR

The standardization of motor test methods of tractor lubricants. V. K. Vinogradov and A. V. Serov. *Neftyanoe Khoz.* 33, No. 4, 61–6(1955).—A very general review of the testing of tractor lubricants. W. M. Sternberg

VINOGRADOV, V.K.; YEROKHINA, L.V.

Effectiveness of feeding carp with gramulated food. Trudy sov. Ikht. kom. no.14:53-58 '62. (MIRA 15:12)

1. Vserossiyskiy nauchno-issledovatel'skiy institut prudovogo rybnogo khozyaystva (VNIPRKh).
(Carp)
(Fishes--Food)

Vinogradov V.K

Evaluation of the filtered sediments from motor lubricants. M. A. Senichkin and V. K. Vinogradov. *Neftyanoe Khoz.* 32, No. 5, 67–70(1954).—The possibility of the removal of various oil additives by filtration can be evaluated in the lab., and the test should be made if their elimination can cause lowering of the lubrication value of the oil. An index of their elimination by filtration must be included in the oil specifications. The various filtration media must be judged by their ability to filter out the additives.

W. M. Steenberg

Vinogradov, A

3

5050. DETERMINATION OF FILTERING OF ADDITIVES FROM ENGINE LUBRICANTS. Benichkin, M.A., and Vinogradov, V.K. (Neft. Khoz. [Oil Ind., Moscow], 1954, 67-70). Circulation of heated lubricants through a fine filter gave similar results as regards loss of additives as use in automobile engines and is recommended as a test method. (L).

VINOGRADOV, V. K.

AID P - 341

Subject	:	USSR/Chemistry
Card	:	1/1
Authors	:	Senichkin, M. A. and Vinogradov, V. K.
Title	:	Evaluation of filtration of additives from motor oils
Periodical	:	Neft. Khoz., v. 32, #5, 67-70, My 1954
Abstract	:	The concentration of the additives in motor oils was studied by the authors by means of periodical filtration. The concentration is found to vary with the filtrating material and the type of additives. The operating characteristics of the motor oil and the effect of the filtrating material and type of additives must be determined experimentally. 2 charts, a diagram and a table.
Institution	:	None
Submitted	:	No date

VINOGRADOV, V. K.; ISSINSKIY, B. V.

Industrial Accidents

Protection of labor and safety engineering in light industry. Tekst. prom. 12, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1952. Unclassified.

SENICHKIN, M.A.; VINOGRADOV, V.K.

Evaluation of defiltration of additives from motor oils. Neft.khoz. 32 no.5:67-70 My '54. (MLRA 7:5)
(Oil inspection) (Petroleum products)

VIDREVICH, YAkov Veniaminovich; VINOGRADOV, V.K., red.

[Productivity of labor in the textile and other light industries of the U.S.S.R.] Proizvoditel'nost' truda v tekstil'noi i legkoi promyshlennosti SSSR. Pod red. V.K.Vinogradova. Moskva, Rostekhizdat, 1960. 127 p. (MIRA 15:5)
(Textile industry—Labor productivity)

VINOGRADOV, V. K.

VINOGRADOV, V. K. "The Physiological Role of Leukocytes in the Ovulation of Fish and some problems of the Nervous Regulation of this Process." Moscow Technical Inst of the Fish Industry and Economy imeni A. I. Mikoyan. Moscow, 1956. (Dissertation for the Degree of Candidate in Biological Science)

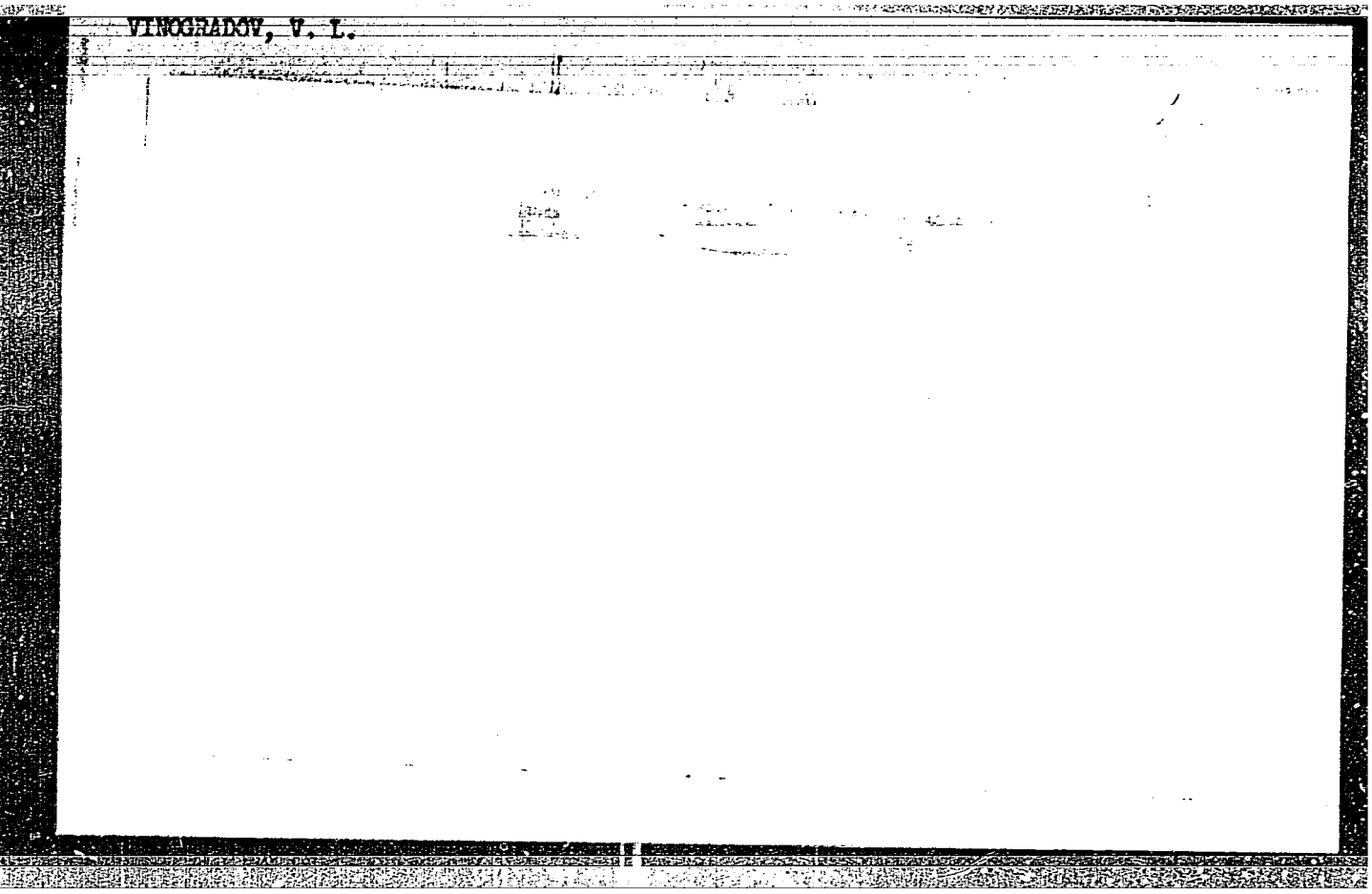
So: Knizhaya Letopis', No. 17, 1956,

SHOSTAKOVSKIY, M.F.; KOCHKIN, D.A.; VINOGRADOV, V.L.; MEYERMAN, V.A.

Research in the synthesis and conversion of oxygen-containing organosilicon compounds. Part 6. Interaction of hydrogen-con-taining alkyl(aryl) dichlorosilanes with alcohols. Izv. AN SSSR. Otd.khim.nauk no.10:1269-1271 O '56. (MLRA 9:12)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo Akademii nauk SSSR.

(Silane) (Alcohols)



VINOGRADOV, V. L.

AUTHORS: Shostakovskiy, M.F., Kochkin, D.A., Vinogradov, V.L. 62-12-4/20

TITLE: Investigation of the Synthesis and of the Transformations of Vinyl Compounds of Silicon (Issledovaniya v oblasti sinteza i prevrashcheniy vinilovykh soyedineniy kremniya) Information 3. The Obtaining of Vinyl-Alkyl-Chlorine-Silanes by the Interaction of Acetylene With Hydrogen-Containing Chlorosilanes and the Investigation of Some of Their Properties (Soobshcheniye 3. Polucheniye vinilalkilkhlorsilanov vzaimodeystviyem atsetilena s vodorodsoderzhashchimi khlorsilanami i issledovaniye ikh nekotorykh svoystv).

PERIODICAL: Izvestiya AN SSSR Otdeleniye Khimicheskikh Nauk, 1957, Nr 12, pp. 1452-1456 (USSR)

ABSTRACT: The present paper deals with the elaboration of the reaction of the vinylation of hydrogen-containing alkyl-halide-silanes as a result of their cooperation with acetylene. From the reaction products the following substances were separated: methyl- and ethyl butadienyl-dichlorine silanes, dimethyl- and diethyltetrachloride silylethanes, as well as dimethyl- and diethyltetrachloride silylethanes. The catalyzers of the vinylation are those of the palladium group (metals, acids, salts). The reaction of vinylation can be realized by means

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Investigation of the Synthesis and of the Transformations of Vinyl Compounds of Silicon. Information 3. The Obtaining of Vinyl-Alkyl-Chlorine-Silanes by the Interaction of Acetylene With Hydrogen-Containing Chlorosilanes and the Investigation of Some of Their Properties

62-12-4/20

of the method interrupted in autoclave as well as by the uninterrupted method (like in the case of the vinylation of alcohols). There are 9 references, 6 of which are Slavic.

ASSOCIATION: Institute for Organic Chemistry AN USSR imeni N.D.Zelinskiy (Institut organicheskoy khimii im. N.D.Zelinskogo Akademii nauk).

SUBMITTED: June 22, 1956

AVAILABLE: Library of Congress

Card 2/2

1. Hydrogen-Vinylation-Reaction 2. Methylbutadienyldichlorine
3. Ethylbutadienyldichlorine 4. Diethyltetrachloride silylethanes

VINOGRADOV, V.L.

SHOSTAKOVSKIY, M.F.; KOCHKIN, D.A.; VINOGRADOV, V.L.; NETERMAN, V.A.

Synthesis and conversion of oxygen containing silicon organic compounds. Part 6: Reaction of oxygen containing alkyl (aryl) dichlorosilanes with alcohols. Zhur. ob. khim. 27 no.9:2487-2491 S '57. (MIRA 11:3)

1. Institut organicheskoy khimii AN SSSR.
(Silanes) (Alcohols)

AUTHORS: Minachev, Kh. M., Shuykin, N. I., Vinogradov, V. L. SOV/62-58-7-12/26

TITLE: A Comparative Investigation of the Catalytic Properties of Platinum on the Conditions of Benzine Aromatization at Atmospheric and Increased Hydrogen Pressure (Sravnitel'noye izucheniye kataliticheskikh svoystv platiny v usloviyakh aromatizatsii benzina pri atmosfernom i povyshennom davleniyakh vodoroda)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 7, pp 866 - 869 (USSR)

ABSTRACT: During the last years the authors of the present paper have dealt with the investigation of the catalytic properties of the Pt-, Pd-, Rh-, Ni- and Co catalysts (Refs 1-10). In the present paper the authors report on the investigation of the activity and stability of the 4% platinized charcoal on the conditions of the aromatization of the benzine fraction at atmospheric pressure and different temperatures. Furthermore the activity and the stability of 0,8% platinized charcoal was investigated on the same conditions as prevailing in the case of the 4% one. The results of the investigations are: The

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A Comparative Investigation of the Catalytic Properties of Platinum on the Conditions of Benzine Aromatization at Atmospheric and Increased Hydrogen Pressure

greatest activity and stability was found with the 0,8% catalyst Pt - C, which operated at 460° and at 20 atmospheres absolute pressure. It is of interest to learn that the two catalysts do not carry out any other reactions but the reaction of the dehydration of the 6-membered cycles. There are 1 figure, 1 table, and 15 references, 15 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im.N.D.Zelinskogo(Institute of Organic Chemistry imeni N.D.Zelinskiy)

SUBMITTED: January 3, 1957

SOV/74-27-10-4/4

AUTHORS: Shostakovskiy, M. F., Kochkin, D. A., Vinogradov, V. L. (Moscow)

TITLE: The Unsaturated Silicon Compounds (Nepredel'nyye soyedineniya kremniya)

PERIODICAL: Uspekhi khimii, 1958, Vol 27, Nr 10, pp 1221-1256 (USSR)

ABSTRACT: Early in this paper the authors deal with the importance of such silicon compounds which have alkyl or alkene groups at the silicon atom. In the USSR as well as abroad abundant scientific publications on the unsaturated silicon compounds are available. The first part of this report is devoted to the vinyl compounds of silicon. In section 1 the following methods for the production of vinyl silane are discussed: a) the production of vinyl chlorosilanes from vinyl chloride and silicon by means of direct synthesis; b) the production of vinyl alkyl silanes and halogen vinyl silanes by means of dehydrochlorination of the chloroalkyl silanes; c) organometallic synthesis of the vinyl compounds of silicon; d) the organolithium synthesis; e) vinylation of the silanes by means of acetyls; f) production of organosilicic vinyl ethers. In the second section the physical properties of the vinyl silanes are discussed. Section three deals

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with the chemical properties of the vinyl silanes: a) interaction between the halogen vinyl silanes and alcohols; b) reaction with ethylene chlorohydrin; c) hydrohalogenation; d) hydrolysis and cohydrolysis; e) combination with aldehydes; f) combination with dialkyldithiophosphoric acids; g) combination with thiocyanogen; h) Friedel-Krafts reaction; i) diene-synthesis; k) the combination with chloroform and tetrachlorosilicon; l) interaction with carbon oxide and hydrogen (oxo-synthesis). The second part of the paper treats the allyl compounds of silicon. Section 1: diverse methods for the production of allyl silanes: a) direct synthesis of the allyl chlorosilanes; b) organomagnesium synthesis of the allyl compounds of silicon; c) organolithium synthesis of the α- and β-alkenyl compounds of silicon; d) hydrogenation of the allyl chlorosilanes; e) production of halogen alkenyl silanes by combination with butadiene; section 2: the physical properties of the allyl silanes; section 3: the chemical properties of the allyl compounds of silicon: The interaction with hydrogen bromide and hydrogen iodide, with hydrogen chloride, with halides; hydrogenation of the allyl silanes, reaction with sulfuric acid etc. Part 3: Unsaturated organosilicic compounds of the acetylene series: section 1:

methods for the production of organosilicic compounds of the acetylene series; section 2: physical properties of the organosilicic compounds of the acetylene series. Section 3: chemical properties of the organosilicic compounds of the acetylene series. Part 4 of the paper deals with the polymerization and the copolymerization of unsaturated compounds of silicon. Section 1: polymerization. Section 2: copolymerization.
There are 3 tables and 119 references, 70 of which are Soviet.

ACC NR: AP6009513 SOURCE CODE: UR/0413/66/000/005/0022/0022

AUTHOR: Petrov, K. A.; Raksha, M. A.; Vinogradov, V. L.

ORG: none

TITLE: Synthesis of dichlorides of alkoxyvinyl- or alkoxyalkyl-vinyl-thiophosphinic acids. [Class 12, No. 179314 announced by the Military Academy of Chemical Defense (Voyennaya akademiya khimicheskoy zashchity)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 5, 1966, 22

TOPIC TAGS: vinyl thiophosphinic acid, dichloride

ABSTRACT: An Author Certificate has been issued describing a method for the synthesis of dichlorides of alkoxyvinyl- or alkoxyalkylvinyl-thiophosphinic acids by the interaction of organic ethers with phosphorus pentachloride in an inert solvent followed by the treatment of the reaction mass with hydrogen sulfide. To broaden the variety of raw materials, the use of ethers of the aliphatic series is suggested. [LD]

SUB CODE: 11/ SUBM DATE: 07Aug64/

Card 1/1 UDC: 547.419.1'053.23.07

L 04[illegible]-67 EWT(j)/EWT(m) [illegible]

ACC NR: AP7000239 SOURCE CODE: UR/0079/66/036/004/0715/0718

21
B

AUTHOR: Petrov, K. A.; Raksha, M. A. ; Vinogradov, V. L.

ORG: none

"Synthesis and Study of the Properties of Derivatives of Alkenephosphinic Acids. I. Production of Dichlorides of Substituted Vinylphosphinic Acids by the Reaction of Ethers with Phosphorus Pentachloride"

Moscow, Zhurnal Obshchey Khimii, Vol 36, No 4, 1966, pp 715-718

Abstract: A method was developed for synthesizing dichlorides of alkoxyvinylphosphinic and beta-alkoxy-alpha-alkylvinylphosphinic acids in good yields by the reaction of ethers with phosphorus pentachloride in an inert solvent or in excess ether, followed by treatment with sulfur dioxide. The dichlorides of beta-propoxy-alpha-methyl and beta-butoxy-alpha-ethylvinylphosphinic and -thiophosphinic acids were prepared and characterized for the first time. The study of the reactions of phosphorus pentachloride with ethers containing mixed radicals and the study of the properties of derivatives of alkenephosphinic acids are being continued. Orig. art. has: 1 table. [JPRS: 37,177]

Card 1/2 UDC: 547.341

0923 0776

L 04842-67

ACC NR: AP7000239

TOPIC TAGS: phosphinic acid, organic synthetic process, phosphorus chloride

SUB CODE: 07 / SUBM DATE: 04 Mar 65 / ORIG REF: 023 / OTH REF: 005

Card 2/2

VINOGRADOV, V.L.

Testing the discharge capacity of turbines at large hydroelectric power stations. Sbor. rab. po gidrol. no.4:128-133 '64.
(MIRA 19:1)

1. Gosudarstvennyy gidrologicheskiy institut, Leningrad.

SAVCHENKO, V.P.; VINOGRADOV, V.L.; YAKOVLEV, Yu.I.

Front and rear effect and its prospecting importance. Geol. nefti. i gaza 9 no.7:36-40 Je '65.

(MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo gaza.

L 4957-66 EWT(m)/EPF(c)/EWP(j) RM

ACC NR: AP5025680 SOURCE CODE: UR/0286/65/000/018/0026/0026

AUTHORS: Petrov, K. A.; Raksha, M. A.; Vinogradov, V. L.

ORG: none

TITLE: A method for obtaining divinylchloroanhydrides of substituted vinylphosphonic acids. Class 12, No. 174627

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 18, 1965, 26

TOPIC TAGS: phosphonic acid, vinylphosphonic acid, fatty acid, phosphor organic compound

ABSTRACT: This Author Certificate presents a method for obtaining divinylchloroanhydrides of substituted vinylphosphonic acids by reacting simple esters with phosphorus pentachloride, with subsequent treatment of the reaction mixture with sulfur dioxide. To increase the range of starting raw materials, esters of simple fatty acids were used. In an alternative procedure, excess of starting ester is used as solvent.

SUB CODE: OC/ SUBM DATE: 11Jul64

Card 1/1 UDC: 547.419.1-312.07

0901 1575

YEFREMOV, Sergey Vasil'yevich; STRUGACH, Vladimir Abramovich; DUBINSKAYA, Vera Aronovna; VINOGRADOV, V.L., red.; PLEMYANNIKOV, M.N., red.; MARAKOSOVA, L.P., tekhn. red.

[Intaglio printing] Glubokaia pechat'. Moskva, Izd-vo "Sovetskaia Rossiia," 1961. 372 p. (MIRA 15:3)
(Plate printing)

SHOR, Isaak Vladimirovich; VINOGRADOV, V.L., red.; POPOV, N.D., tekhn. red.

[Electric power plants for motion-picture projection] Kinoelektrostantsii; uchebnoe posobie dlia uchashchikhsia kinotekhnikumov. Moskva, Izd-vo "Sovetskaia Rossiia," 1960. 272 p. (MIRA 13:7)
(Electric power plants) (Motion-picture projection)

BEREZIN, Boris Ivanovich; VINOGRADOV, V.L., red.; ROZEN, E.A., tekhn.red.

[Printing industry materials; a textbook] Poligraficheskie materialy; uchebnik. Moskva, Izd-vo "Sovetskaia Rossiia," 1960. 560 p. (MIRA 13:7)

(Paper products) (Printing machinery and supplies)

SHIMON, Aleksandr Alekseyevich; VINOGRADOV, V.L., red.; YELAGIN, A.S., tekhn.red.

[Technical means for cultural and educational work; textbook for the schools for community center employees] Tekhnicheskie sredstva kul'turno-prosvetitel'noi raboty; uchebnik dlia kul'turno-prosvetitel'nykh shkol. Moskva, Izd-vo "Sovetskaia Rossiia," 1959. 245 p. (MIRA 13:5)
(Electric apparatus and appliances) (Community centers)

YURKEVICH, Iosif Andreyevich. Prinimali uchastiye: FEDOROV, S.F.; VINOGRADOV, V.L., nauchnyy sotrudnik; KOZYREVA, N.A., nauchnyy sotrudnik; PEREVEDENTSEVA, M.I., nauchnyy sotrudnik; FEYRABENT, V.A., nauchnyy sotrudnik. MIRONOV, S.I., akademik, otv.red.; SHOBOLOV, S.P., red. izd-va; GUSEVA, A.P., tekhn.red.

[Facies and geochemical characteristics of Meso-Cenozoic deposits of the eastern part of Western Siberia] Fatsial'no-geokhimicheskaia kharakteristika mezo-kainozoiskikh otlozhenii Vostochnogo Zaural'ia. Moskva, Izd-vo Akad.nauk SSSR, 1959. 114 p. (MIRA 12:4)

1. Rukovoditel' Vostochnoy kompleksnoy nefte-gazovoy ekspeditsii AN SSSR (for Fedorov). 2. Chlen-korrespondent AN SSSR (for Fedorov). 3. Laboratoriya genezisa nefti (for Mironov, Vinogradov, Kozyreva, Perevedentseva, Feyrabent).
(Siberia, Western--Geology, Stratigraphic)

VINOGRADOV, V.M.; SHAKURSKIY, K.D.; USPENSKIY, V.K.; BRAYLOVSKIY, N.G., inzh., red.; VOROB'YEVA, L.V., tekhn. red.

[How to prevent the blocking of wheel sets] Kak predupredit' zaklinivanie kolesnykh par. Moskva, Transzheldorizdat, 1963. 103 p. (MIRA 17:2)

VINOGRADOV, V.M.

Hydrostatic level recorder with pneumatic transmission.
Trudy GGI no.84:60-63 '60. (MIRA 13:11)
(Liquid level indicators)

VINOGRADOV, V. N.

"Hook-rule (Klyuchvaya reyka) Designed by the State Hydrological Institute Design," No 4, pp 83-84.
(Meteorologiya i Gidrologiya, No 6 Nov/Dec 1947)

SO: U-3218, 3 Apr 1953

VINOGRADOV, V.M.

New hydrometric windlass equipped with a rotatable crane arm.
Trudy GGI no.70:76-80 '58. (MIRA 11:11)
(Hydrology)

VINOGRADOV, V. M.

Ice sinker and device for lowering the rotator when working on ice. Trudy GGI no.70:81-83 '58. (MIRA 11:11)
(Hydrology--Cold weather conditions)

VINOGRADOV, V.M.; RAZUMOVSKIY, V.V.; SMIRNOVA, L.V.; TARZIMANOV, P.F.; KOZHEVNIKOV, O.V.; PICHUGIN, B.M.; PROKOP'EV, I.V.; FEDOROV, B.A.; KOSHELEVSKIY, V.S.; IVANOVA, A.S.; SNIGIREV, V.G., YASHCHENKO, G.I.; VORONKOVA, Ye.A.; ZAMYATINA, A.A.; SERGEYEV, N.A.; KUREPOV, A.I.; POPOV, B.L.; FINOGENOV, V.P., NABOROV, V.B.; CHENCHIKOVSKIY, S.F.; IVANOV, Ye.A.; ALKHIMOV, V.S., red.; VINOGRADOV, V.M., red.; SMIRNOV, A.M., red.; KAKHOVSKAYA, O.G., red. izd-va; RUDCHENKO, A.M., red. izd-va; LEKANOVA, I.S., tekhn. red.

[Foreign commerce of the U.S.S.R. with capitalist countries] Vneshniaia torgovlia SSSR s kapitalisticheskimi stranami. Moskva, Vneshtorgizdat, 1957. 232 p. (MIRA 11:7)

1. Moscow. Nauchno-issledovatel'skiy kon"yunkturnyy institut.
(Russia--Commerce)

PICHUGIN, B.M.; SABEL'NIKOV, L.V.; BODRIN, V.V.; SOLODKIN, R.G.; KRUZHKOV, V.I.; SEROVA, L.V.; LYUBSKIY, M.S.; PUCHIK, Ye.P. [deceased]; KAMENSKIY, N.N.; YASHCHENKO, G.I.; GERCHIKOVA, I.N.; FEDOROV, B.A.; KARAVAYEV, A.P.; VINOGRADOV, V.M., red.; SHLENSKAYA, V.A., red.izd-va; VOLKOVA, Ye.D., tekhn.red.

[Commercial policy of European capitalist countries] Torgovo-politicheskii rezhim evropeiskikh kapitalisticheskikh stran. Moskva, Vneshtorgizdat, 1960. 234 p.

(MIRA 14:2)

1. Moscow. Nauchno-issledovatel'skiy kon"yunkturnyy institut.
(Europe, Western--Foreign trade regulation)

GORBUNOV, Rem Grigor'yevich; VINOGRADOV, V.M., red.; KAKHOVSKAYA, O.G., red. izd-va; LEKANOVA, I.S., tekhn. red.

[Soviet-American trade relations] Sovetsko-amerikanskie torgovye otnosheniia. Moskva, Vneshtorgizdat, 1961. 58 p. (MIRA 14:6)
(Russia—Commerce—United States)
(United States—Commerce—Russia)

VINOGRADOV, V.M., inzhener.

Irregular heating of metal in an electric arc furnace. Stal' 17 no.3: 275-276 Mr '57. (MLRA 10:4)

1. Tsentral'naya laboratoriya avtomatiki.
(Electric furnaces)

137-58-6-11460

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 30 (USSR)

AUTHOR: Yefroymovich, Yu.Ye., Vinogradov, V.M

TITLE: Refinement of a Method for Measuring the Temperature of Molten Steel in a Furnace (Usovershenstvovaniye metoda izmereniya temperatury zhidkoy stali v pechi)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii, 1957, Vol 10, pp 629-633

ABSTRACT: The temperature range within the bath of an electric steel foundry furnace may attain 40 or 50°C. Investigations conducted by the TsLA and the Elektrostal' Plant, in which 5- and 15-t furnaces are used, confirm the existence of a temperature gradient attaining 1.5 degree/cm. Rabbling reduces but does not eliminate the temperature differences. Improved accuracy in temperature measurement may be accomplished by refinement of the measuring devices and primarily by equalizing the temperature field of the bath, e.g., by the introduction of magnetic agitation. An experimental installation for the measurement of temperature that has been mounted on a 5-t furnace consists of a thermocouple with W-Mo electrodes (in a

Card 1/2

Refinement of a Method (cont.)

shielding shell containing a circulating inert gas), lowered into the furnace through a water-cooled aperture in the roof. The service life of the thermocouple has been brought to 15-20 hours.

V.T.

1. Furances--Performance 2. Steel--Temperature factors 3. Temperature--Measurement
4. Thermocouples--Applications

Card 2/2

VINOGRADOV, V.M.

Automatic control of thermal conditions in steel smelting arc furnaces. Izv. vys. ucyeb. zav.; chern. met. 4 no.7:180-194 '61. (MIRA 14:8)

1. Moskovskiy institut stali.
(Electric furnaces)
(Automatic control)

S/131/61/000/004/003/003
B105/B202

AUTHORS: Yefroymovich, Yu. Ye., Vinogradov, V. M., Pirozhnikov, V. Ye., Danishevskiy, S. K.

TITLE: Application of refractory endpieces for controlling the lining temperature of electric arc furnaces by means of thermocouples

PERIODICAL: Ogneupory, no. 4, 1961, 181-184

TEXT: The authors describe thermocouples with refractory endpieces for measuring the temperature of liquid steel and of the refractory lining. The Tsentral'naya laboratoriya avtomatiki (TsLA) (Central Laboratory of Automation) and the zavod "Elektrostal'" (Works "Elektrostal'") are conducting comprehensive work for the automation of the steel melting process in electric arc furnaces. The following persons participate in this work: L. V. Vinogradova, N. I. Voronin, L. I. Gellis, I. A. Getman, V. V. Levchuk, T. Z. Malikova, O. M. Margulis, K. G. Romanchenko, and D. S. Rutman. Fig. 1 shows the arrangement of the thermocouples for continuous temperature measurement of the lining as well as of the

liquid steel temperature in the electric arc furnace. Thermocouples with tungsten-rhenium electrodes with a content of 5% and 20% of rhenium BP5/20 (VR5/20) which had been developed by the TsLA and the Moskovskiy elektrolampovyy zavod (Moscow Incandescent Lamps Factory) and tungsten-molybdenum electrodes with an addition of 0.5% aluminum, which were produced by the TsNIIChM (Tsentral'nyy nauchno-issledovatel-skiy institut chernoy metallurgii (Central Scientific Research Institute of Ferrous Metallurgy)) proved to be the most stable thermocouples for a continuous temperature control. The temperature of the lining is continuously recorded by a self-recording potentiometer. To select the most suitable endpieces the products obtained from ZrO_2, Al_2O_3, BeO, MgO were tested which had been produced by the VIO, UNIIO (Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (Ukraine Scientific Research Institute of Refractories)) as well as by the Podol'skiy zavod (Podol'sk Works). The experiments were made in a 20-t furnace operating with a 9000-kva transformer. Maximum stability was observed in high-alumina endpieces which had been produced by the Podol'sk Works of Refractories. The experimental results showed that endpieces with a wall

Application of refractory endpieces ...

thickness of more than 1.0 mm, are suited best for the continuous temperature measurement of the lining of walls and arcs during 4.5 hours (duration of melt) (Fig. 4). Endpieces with higher thermal stability are necessary for temperatures exceeding 1700°C. The duration of melting and thus also the overheating of the lining can be reduced by increasing the temperatures of the metal in the period of oxidation. Test melts of remolten ШХ15 (ShKh15) steel showed that with a reduction of the specific current consumption by 50-55 kwh on the average, the average duration of melt could be reduced by 33 and/or 17 min. The control of electrical and thermal conditions resulted in an increase of the average stability of walls and arcs of electric arc furnaces by approximately 3-5 melts. There are 4 figures, 2 tables, and 4 Soviet-bloc references.

ASSOCIATION: TsLA Glavproyektmontazhavtomatiki

Card 3/5

Application of refractory endpieces ...

Legend to Fig. 1:
I - immersion thermocouple; II - thermocouple in the arc; III - thermocouple in the wall; 1) metal tube; 2) graphite block; 3) refractory endpiece

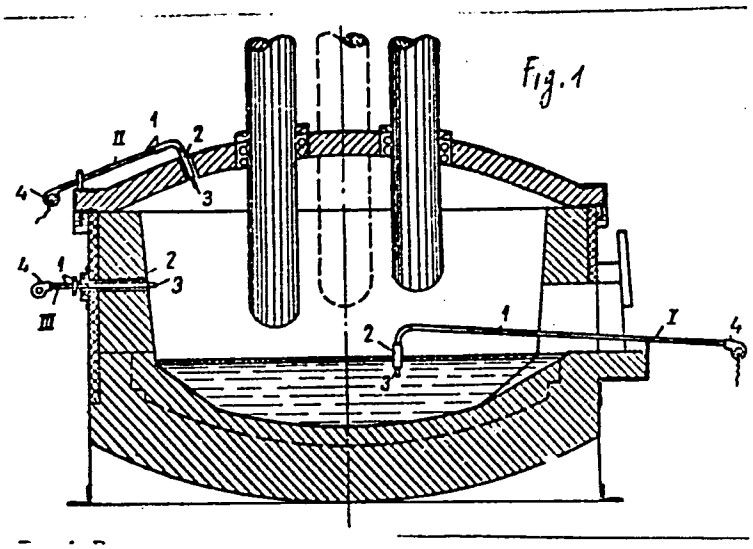

Fig. 1

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B105/B202

Legend to Fig. 4: durability of the endpieces as depending on their wall thickness when measuring the temperatures of electric arc furnaces.
a) durability, hr; b) wall thickness, mm.

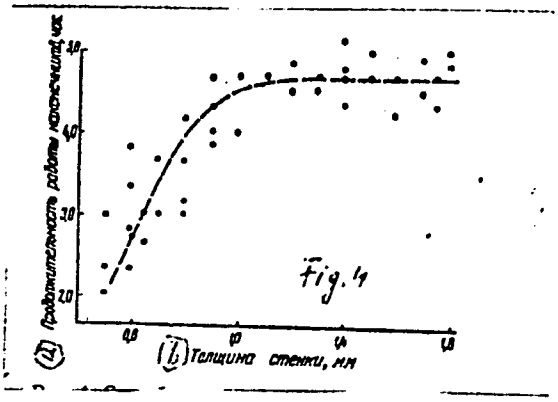

Fig. 4

Card 5/5

37239
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E114/E435

18.3700

AUTHOR: Vinogradov, V.M.

TITLE: Automation of steel melting in electrical arc furnaces

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.3, 1962, 67-76

TEXT: Currently, steel melting is controlled manually, guided by periodic spectrographic and chemical analysis, temperature measurements and measurements of electrical quantities. This does not ensure adequate uniformity of the product. The present work, undertaken in the Central Automation Laboratories, enquires into various organizational and technical measures which would facilitate mechanization and automation of the steel melting process. Criteria are established for the essential measurements. The melting cycle comprises a chain of consecutive functions determined by the state of the metal, the slag and the furnace. The controllable factors influencing the process include the supply of electrical energy, feeding charge materials and oxygen into the furnace and mechanical operations such as mixing.

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The non-controllable factors are the initial conditions of the furnace and the furnace charge. An experiment was carried out on a 20 ton capacity furnace making ball-bearing steel ШХ15 (ShKh15). The cycle was divided into 32 main invervals of which 37.8% were "technological", 28.9% "supply of energy" and 33.3% "mechanical operations". It was found possible to reduce the average length of cycle by 73 minutes, corresponding to 50% increase in productivity. A further 18 minutes could be saved by applying electromagnetic mixing and increasing the speed of electrode movement. The savings were 16, 9 and 25% in the "technological", "energy supply" and "mechanical operations" parts of the cycle respectively. Some 40 to 50 kWh/ton were saved in electrical energy thereby. Use of oxygen saves 5 to 20% of cycle time. The information needed to control the cycle comprises temperatures of the refractory lining and of the metal, and physical and chemical measurements of the state of the furnace contents. Some measurements can be done instantaneously, others require a period of time. Some are carried out visually - subjectively. During 24.7% of the time (comprising 18 intervals

out of 32) interlock control can be applied initiating one interval automatically when the preceding interval is completed. During 20.5% of the time (comprising 10 intervals) the process is controlled by chemical analysis and instantaneous measurements. During 54.7% of the time (11 intervals) control is purely by subjective judgment. Conclusions are that the division of process into intervals provides a rational basis for estimating the relative importance of function time savings and for the determination of essential quantities which have to be measured. New sensing heads have to be developed to provide information for automatic control of 50 to 60% of the cycle time which is now done by subjective judgment. The work was carried out at the Central Automation Laboratory under the direction of Professor Doctor of Technical Sciences N.V.Okorokov. There are 2 figures and 4 tables.

ASSOCIATIONS: Moskovskiy institut stali i Tsentral'naya laboratoriya avtomatiki (Moscow Steel Institute and Central Automation Laboratory)

SUBMITTED: June 21, 1961

Card 3/3

S/130/62/000/006/001/003
A006/A101

AUTHORS: Vinogradov, V. M., Yefroymovich, Yu. Ye., Kablukovskiy, A. F., Simonov, V. I.

TITLE: Automated control and regulation of heat conditions of a steel-melting arc furnace

PERIODICAL: Metallurg, no. 6, 1962, 16-18

TEXT: To eliminate deficiencies in the use of immersion thermocouples, the Central Laboratory of Automation and the Elektrostal' Plant have designed a mechanized unit for multiple periodic measurement of the metal temperature in the pool of a steelmelting arc furnace and have developed an automatic method of regulating the heat conditions of the furnace. The temperature-measuring unit consists of a pneumatic force-mechanism, a trolley for moving the thermocouple, guides, a mechanism controlling the position of the thermocouple and a control board. The unit is fixed to the furnace portal and the tungsten-rhenium thermocouple is introduced into the furnace through a special hole. Between the measurements, this aperture is closed by a pneumatic-driven slide which operates the electro-pneumatic relay circuit of the thermocouple. An electronic potentio-

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meter with a signal unit and automatic control of the completed measurement serves as a secondary registering device. The use of this device reduces errors in measuring the mean pool temperature; the temperature control can also be performed during smoke formation without switching-off the furnace. The metal temperature pulse can be used to produce a closed circuit for the automatic control of the furnace heat conditions. The metal temperature indicator is connected to the heat-condition control unit which operates the transformer-voltage step-switch and an automatic device regulating the power supply with the aid of a computer. Experiments made with the new and conventional units show that the temperature straggling of the metal in the pool and in the ladle can be reduced by a factor of 2.5 - 3.5. The efficiency of the furnace is raised by 7 - 9%; electric-power consumption decreases by 3.5 - 4.0%. There are 2 figures.

ASSOCIATIONS: TsLA (Central Laboratory of Automation); Zavod"Elektrostal'"
(Elektrostal' Plant)

S/133/62/000/006/002/015
A054/A127

AUTHORS: Kablukovskiy, A. F., Candidate of Technical Sciences, Simonov, V. I., Vinogradov, V. M., Engineers

TITLE: Temperature checks of the bath and control of arc furnace heat conditions

PERIODICAL: Stal', no. 6, 1962, 521 - 523

TEXT: The conventional method of ensuring the required heat conditions of smelting, based on immersion thermo-couples and manual control, sometimes causes variations in temperature of 60 - 70°C during the oxidizing and reducing periods. To improve the existing temperature control methods, tests were carried out at the "Elektrostal'" Plant in smelting ШХ15 (ShKh15) grade steel in a 20-ton arc furnace. In these tests the optimum operating conditions of the electrical system were established for obtaining the required metal temperatures and preventing overheating of the furnace lining. It was found that the main factors affecting the control of the furnace operation are the accuracy of the metal temperature recording in the bath and the accuracy with which instructions as to the

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duration of smelting phases, the amounts of slag forming, alloying elements, oxygen and ore are being followed. The conventional manual method of bath temperature recording with immersion thermocouples in arc furnaces not provided with electromagnetic stirring equipment is not accurate enough (the places of measurement vary) and necessitates switching off the current, thus causing unwarranted standstills (5 - 7 minutes for 20 measurements). Hence a mechanism has been developed to allow mechanical temperature recording of the metal by means of BP-5/20 (VR-5/20) immersion thermocouples. This mechanism gives more accurate average indications, because the places of recording in the depth of the bath and on the metal surface are stabilized. It was also possible to increase the number of measurements to 15 - 20 and to reduce the current switch-off time during smelting. When applying the new heat control method (manually), the variations in temperature were reduced to $\pm 10^{\circ}C$ and overheating of the lining was completely eliminated. Comparison of the temperature conditions with the conventional and the experimental method shows that inaccuracies of the conventional control system are apt to lengthen the smelting process (for the reducing period alone) by an average of 15 - 20 minutes and to increase power consumption by 30 - 40 kW-hour/ton.
There are 3 figures.
ASSOCIATION: Zavod "Elektrostal" ("Elektrostal'" Plant) and Tsentral'naya laboratoriya avtomatiki (Central Laboratory of Automation)